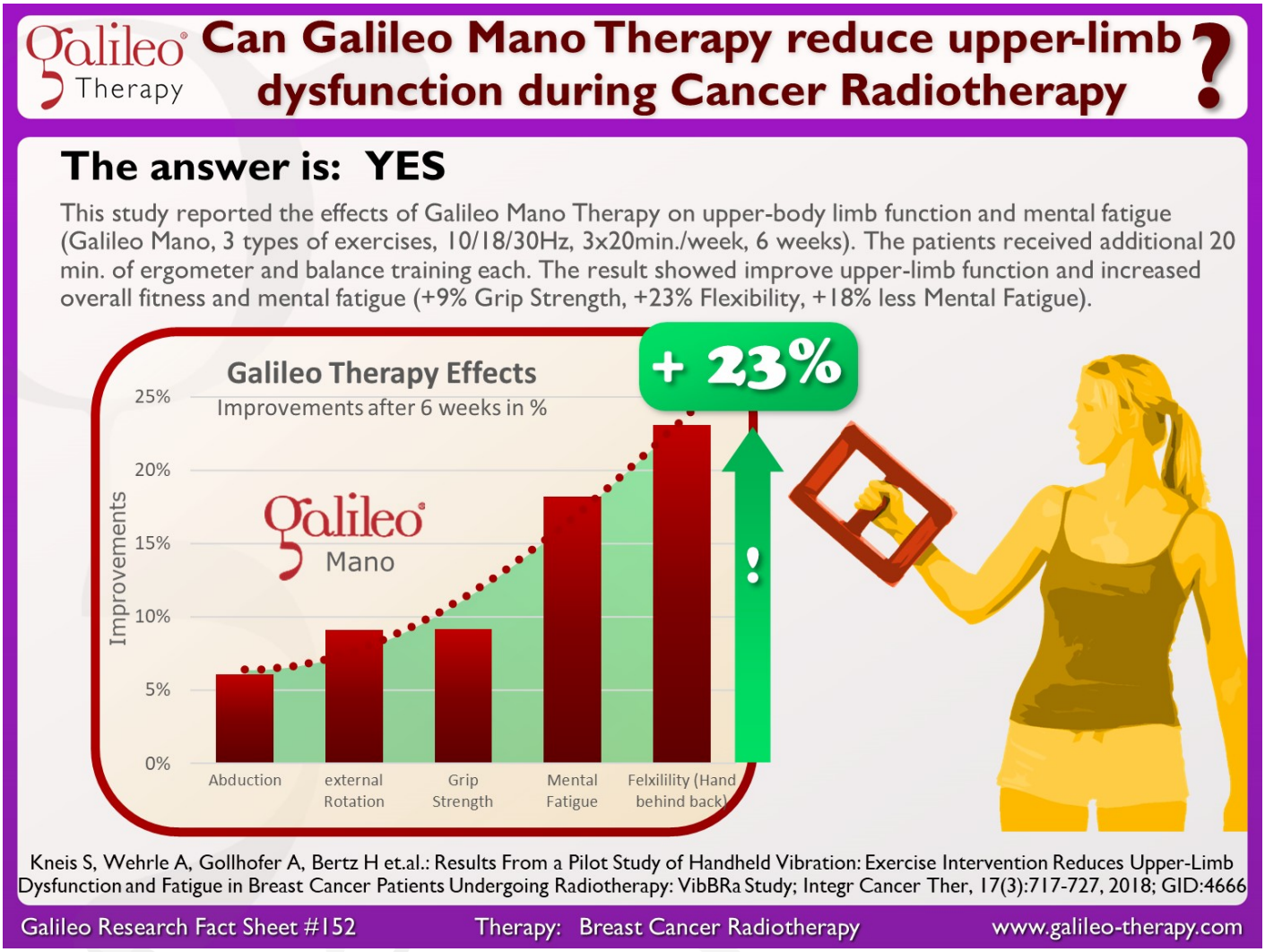


Can Galileo Mano Therapy reduce upper-limb dysfunction during Cancer Radiotherapy?

This study investigated the effects of Galileo Therapy using the Galileo Mano Med on reduction of upper-limb dysfunction in breast cancer patients during 6 weeks of acute radio therapy.

The patients received over a period of 6 weeks three times per week 20 minutes Galileo Therapy. The Galileo Mano Therapy consisted of 5 exercises targeting three different aspects (relaxation: 8-12Hz, active coordination: 16-20Hz, improvement muscle function: 22-30Hz).

In addition, the patient received also 20 min. of ergometer training and 20 minutes of balance training per session. As a result, the patients showed a significantly improved upper-limb function (+9%), flexibility (+23%) bat also general fitness and a reduced mental fatigue (-18%).

These results show how effective Galileo Therapy can be used very effectively also in acute (breast)cancer therapy.

The study is in line with results of the university of Ulm showing a significant reduction of poly-neuropathy (pain) during acute chemo therapy

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# Results From a Pilot Study of Handheld Vibration: Exercise Intervention Reduces Upper-Limb Dysfunction and Fatigue in Breast Cancer Patients Undergoing Radiotherapy: VibBRa Study.

Kneis S[1], Wehrle A[2], Ilaender A[3], Volegova-Neher N[4], Gollhofer A[3], Bertz H[1].

## Abstract

*PURPOSE:*

Although there is evidence that breast cancer patients benefit from exercising during treatment, exercising during radiotherapy and especially the effects on upper-limb dysfunctions have been infrequently assessed. Therefore, we primarily aimed to confirm our interventions' feasibility and secondarily aimed to affect upper-limb dysfunctions and fatigue.

*METHODS:*

Twenty-two breast cancer patients scheduled for radiotherapy were allocated to an intervention (IG) or a passive control group (CG) as they preferred. IG exercised 3×/week during 6 weeks of radiotherapy: cycling endurance, handheld vibration, and balance training. We documented adverse events and training compliance (feasibility) and assessed the range of shoulder motion (ROM), isometric hand grip strength, vibration sense on the first metacarpophalangeal joint of the affected upper limb, and fatigue.

*RESULTS:*

We observed no adverse events and a training compliance of 98 %. IG's ROM improved significantly (abduction: 11°; 95% confidence interval [CI] 5 to 20; external rotation: 5°, 95% CI 0 to 10), as did the hand grip strength (1.6 kg, 95% CI -0.6 to 3.1), while CG's ROM did not change. CG's vibration sense worsened (-1.0 points, 95% CI -1.5 to -0.5), while IG's remained stable. Changes in general fatigue levels between IG (-2.0 points, 95% CI -3.0 to -1.0) and CG (0.5 points, 95% CI -1.0 to 4.5) revealed significant differences ( P = .008)

Conclusions: Our intervention proved to be feasible and provides novel findings: it reduced fatigue levels and interestingly, handheld vibration exercises improved upper-limb function due to shoulder ROM, hand grip strength, and vibration sense.

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